**What is claimed is:**

1. An electronically conducting fuel cell component comprising:

a) a porous metal flow field;

b) an intermediate layer bonded directly to the porous metal flow field; and

c) an electrode bonded directly to the intermediate layer.

2. The fuel cell component of claim 1, wherein the porous flow field comprises a three-dimensional reticulated metal structure.

3. The fuel cell component of claim 2, wherein the three-dimensional reticulated structure comprises porous copper, porous nickel, porous aluminum, porous titanium, or a porous aluminum-titanium alloy.

4. The fuel cell component of claim 3, wherein the three-dimensional reticulated structure comprises porous nickel.

5. The fuel cell component of claim 1, wherein the porous metal flow-field further comprises a protecting layer disposed on at least one surface thereof.

6. The fuel cell component of claim 5, wherein the protecting layer comprises a metal or a metal oxide.

7. The fuel cell component of claim 6, wherein the protecting layer comprises tin, copper, nickel, aluminum, titanium, or gold.

8. The fuel cell component of claim 6, wherein the protecting layer comprises ruthenium oxide, titanium oxide, or tin oxide.

9. The fuel cell component of claim 8, wherein the protecting layer comprises tin oxide.

10. The fuel cell component of claim 9, wherein the tin oxide layer is between about 1 and about 5 μm thick.

11. The fuel cell component of claim 10, wherein the tin oxide layer is between about 1 and about 2 μm thick.

12. The fuel cell component of claim 1, wherein the intermediate layer comprises a polymer and high surface area carbon particles.

13. The fuel cell component of claim 12, wherein the polymer comprises poly-tetrafluoroethylene, perfluoroethylene-perfluoropropylene copolymer, perfluoroalkoxy, or polyvanilidene fluoride.

14. The fuel cell component of claim 1, wherein the electrode comprises a polymer electrolyte and an electrocatalyst.

15. A method for making an electronically conducting fuel cell component comprising the steps of:

a) directly bonding an electrically conducting intermediate layer to a porous flow field; and

b) directly bonding an electrode to the intermediate layer.

16. The method of claim 16, wherein the porous flow field comprises a three-dimensional reticulated metal structure.

17. The method of claim 16, wherein the three-dimensional reticulated structure comprises porous copper, porous nickel, porous aluminum, porous titanium, or a porous aluminum-titanium alloy.

18. The method of claim 17, wherein the three-dimensional reticulated structure comprises porous nickel.

19. The method of claim 16, wherein the porous metal flow-field further comprises a protecting layer disposed on at least one surface thereof.

20. The method of claim 19, wherein the protecting layer comprises a metal or a metal oxide.

21. The method of claim 20, wherein the protecting layer comprises tin, copper, nickel, aluminum, titanium, or gold.

22. The method of claim 20, wherein the protecting layer comprises ruthenium oxide, titanium oxide, or tin oxide.

23. The method of claim 22, wherein the protecting layer comprises tin oxide.

24. The method of claim 23, wherein the tin oxide layer is between about 1 and about 5 μm thick.

25. The method of claim 24, wherein the tin oxide layer is between about 1 and about 2 μm thick.

26. The method of claim 16, wherein the intermediate layer comprises a polymer and high surface area carbon particles.

27. The method of claim 26, wherein the polymer comprises poly-tetrafluoroethylene, perfluoroethylene-perfluoropropylene copolymer, perfluoroalkoxy, or polyvanilidene fluoride.

28. The method of claim 16, wherein the electrode comprises a polymer electrolyte and an electrocatalyst.